

COMPARITIVE STUDY OF TYPE 2 MEDIAN CROSSOVERS AND MEDIAN U-TURNS

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ABSTRACT

Many states use rural expressway median crossovers which provide for separation between the two opposing traffic lanes to manage the direct left turn movements between the expressways and cross roads. As the volume increases on the major road, the traffic from the crossroad faces difficulty in finding a gap to enter the other side of the driveway which results in long travel and delay times. Sometimes the storage length provided for the expressway vehicles to make a left turn at the median crossover may get occupied completely and the vehicles may extend back creating a dangerous situation. The research describes the comparative study of type 2 median crossovers and Median U-Turns and estimates where the rural expressway Type 2 median crossover fails in its operation. The Highway Capacity Software and VISSIM, the simulation tool, were used to obtain the performance characteristics of the median crossover based on operational parameters including travel time, delay time and Level of service. A design tool was developed that helps to make a decision on the distance required to be provided between the crossroad and the Median U-Turn. This design tool is based on the volume combinations of the crossroad and the major road. Various combinations of traffic volumes have been assumed based on which, the extent to which the conventional design option, the Median U-Turn with unsignalized condition and signalized condition will work were determined from the performance measures obtained in VISSIM. Cost estimates that include the construction costs and user costs have been made for all the three design options.